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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,454	07/29/2003	Kyesan Lee	240872US2	4837

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EXAMINER	
HEIBER, SHANTELL LAKETA	
ART UNIT	**PAPER NUMBER**
2617	

NOTIFICATION DATE	DELIVERY MODE
09/21/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Advisory Action Before the Filing of an Appeal Brief	Application No. 10/628,454	Applicant(s) LEE ET AL.	
	Examiner Shantell Heiber	Art Unit 2617	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 31 August 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: _____.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Attachment.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

Response to Arguments

Applicant's arguments filed on August 31, 2007 have been fully considered but they are not persuasive.

Applicant argues that ***Paulraj does not teach if each antenna is to transmit using a different carrier frequency or if plural antennas are provided as a plurality of antenna groups with each antenna group having plural antennas that all use a carrier frequency different from the carrier frequency of the antennas in another group.*** According to Col. 7, lines 30-32, Paulraj acknowledges other approaches including the use of different carrier frequencies (multi-carrier techniques), therefore implying of such possibilities. Paulraj discloses BTS 12 sending transmit signals TS to all receive units 14 via channels 22A and 22B. Further disclosing, other approaches including the use of multi-carrier techniques. The communication system can be based on any multiple access technique including TDMA, FDMA, CDMA and OFDMA. (Col. 5, lines 11-14; Col. 5, lines 59-66; Col. 7, lines 30-32 and Col. 12, lines 11-12).

Applicant argues, ***"there are no teachings or suggestions in Paulraj of implementing the suggested Space-Time Coding with the MC-CDMA scheme."*** The examiner maintains arguments for the same reasons as noted above. Paulraj discloses a Space-Time Coder 65 and Space-Time Decoder 88 as shown in Figures 3 and 4. (Also, Col. 3, lines 63-64; Col. 7, lines 12-32 and Col. 9, lines 52-57).

Applicant argues that ***Paulraj relate to providing transmit signals assigned to different antennas, not to mapping output signals "to signal points on a conjugate plane."*** The examiner disagrees with applicant's statement of "completely

missing the point", therefore redirecting the applicant to the fact of merely disagreeing with the arguments presented. The examiner maintains rejections as presented in last action. Col. 9, lines 1-13 teaches the S-T Coding Unit 66 in conjunction with transmit processing unit 72 operating on the K spatial multiplexed streams to form an antenna mapping unit which maps streams (output signals) to transmit antennas.

In regards to the de-mapping means of claims 5 and 11, Col. 10, lines 40-42 teaches the streams are reconstructed (de-mapped) and converted to a serial stream by parallel to serial converter 96. Also, the streams were mapped after converting from serial to parallel; it is inherent for the streams to be de-mapped in order for converting back to serial.

The examiner disagrees with applicant's argument that **the combining of Figures 3 and 6 and Figures 7 and 8 is taught by the PTO, not by Paulraj.** According to Col. 12, lines 12-15, as an example, Figures 6 and 7 illustrate adaptations necessary to transmit unit 50 and receiving unit 80 for implementation in an OFDM system. Figure 3 shows a transmit unit 50 and Figure 4 shows a corresponding receiver 80 for receiving signals transmitted from transmit unit 50. The system can be based on any multiple access technique including TDMA, FDMA, CDMA and OFDMA in that Figures 6 and 7 show a modified transmit unit 50 and receiver unit 80 to operate in an OFDM system. According to Figures 3 and 6, the modification occurs at the transmitting process G (z) 72 before further transmitting the signals from antennas TA. (Col. 12, lines 11-24). According to Figures 4 and 7, the modification occurs between the RA receiving the signals, further where signals are passed through the S-F matrix

channel estimator and then to the receive processing block 132. From there, the processing of the receive signals proceeds as in receive unit 80. (Col. 12, lines 25-35). Thus, Figures 3 and 6 & Figures 4 and 7 are combined and disclose the limitations as claimed in claims 1, 5 and 11.

In regards to claims 1 and 11, ***"a plurality of multicarrier CDMA transmit means for respectively copying in parallel output signals from said Nc/SF space time transmit diversity encoding means to SF signals"***. The examiner disagrees and maintains rejections as presented in the last action. Paulraj teaches a plurality of multicarrier CDMA transmit means for copying in parallel (serial-to-parallel converter 120) output signals from encoding means (Space-Time Coding unit 66). (Col. 7, lines 11-31; Col. 12, lines 11-24 and Figures 3 & 6).

The examiner maintains the rejections for claims 1-19.

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